

School:		School of Engineering and School of Business Management			<< Declaration of BEng major															<< Declaration of BBA major															Student's Pathway					
Program:		Dual Degree Program (BEng in Chemical Engineering and BBA in Marketing)																																						
Course Offering Dept. (course code prefix)	Course Code	Course Title / Courses List			Qtr/ta	Year 1 Fall	Year 1 Spring	Year 2 Fall	Year 2 Spring	Year 3 Fall	Year 3 Spring	Year 4 Fall	Year 4 Spring	Year 5 Fall	Year 5 Spring	Subtotal	Remarks																							
BEng in Chemical Engineering																																								
Engineering Fundamental Courses																																								
COMP	1022P	Note: COMP 1022P OR COMP 1023 OR COMP 2011 OR COMP 2012H			3.5													Students should take COMP 1022P, COMP 1023, COMP 2011 or COMP 2012H which will also be used to substitute ISOM 2010 and to waive ISOM 2020																						
COMP	1023	Introduction to Computing with Java			3												3																							
COMP	2011	Introduction to Python Programming			3																																			
COMP	2012H	Programming with C++			4																																			
CHEM	1012	General Chemistry B: Atomic Structure, Molecules, and Bonding Theories			3	3												3																						
MATH	1013	Note: MATH 1013 OR MATH 1020 OR MATH 1023			3.4													DDP students should take MATH 1013 or MATH 1020 or MATH 1023 to satisfy the requirements of both BEng and BBA degrees																						
MATH	1020	Calculus I			4	3																																		
MATH	1023	Accelerated Calculus			3																																			
MATH	1023	Honors Calculus I			4																																			
PHYS	1112	Note: PHYS 1112 OR PHYS 1312			3													3																						
PHYS	1312	General Physics I with Calculus			3		3																																	
PHYS	1312	Honors General Physics I			3																																			
Required Credits for Engineering Fundamental Courses					13-19	6	6	0	0	0	0	0	0	0	0	0	12																							
Major Required Courses and Electives																																								
CENG	1000	Foundations of Chemical and Biological Engineering			3	3												3	NOTE: Those entering the department in Year 2 will take this course in Year 2 Fall.																					
CENG	1010	Academic and Professional Development I			0	0												0																						
CENG	1110	Introduction to Chemical Engineering			3		3												3	NOTE: Those entering the department in Year 2 will take this course in Year 2 Fall.																				
CENG	1500	A First Course on Materials Science and Applications			3			3										3																						
CENG	2210	Chemical and Biological Engineering Thermodynamics			3				3										3																					
CENG	2220	Transport Phenomena I			3					3									3																					
CENG	2310	Modeling for Chemical and Biological Engineering			3						3								3																					
CENG	2320	Modeling for Chemical and Biological Engineering II			3						3								3																					
CENG	3110	Process Dynamics and Control			3							3							3																					
CENG	3150	Integrated Chemical Process & Product Design			5							5							5																					
CENG	3210	Separation Processes			3						3								3																					
CENG	3220	Transport Phenomena II			3							3							3																					
CENG	3230	Chemical and Biological Reaction Engineering			3							3							3																					
CENG	3260	Data Science for Molecular Engineering			3								3						3																					
CENG	3900	Chemical and Environment Engineering Laboratory			4								4						4																					
CENG	4020	Academic and Professional Development II			0														0																					
					6																																			
Note: CENG 4820 OR CENG 4830 OR CENG 4960 (Students taking the Research Option must take CENG 4960)					6																																			
CENG	4820	Chemical Engineering Capstone Design			6											3	3	6																						
CENG	4830	Chemical Engineering Thesis Research			6																																			
CENG	4960	Chemical Engineering Industrial Project			6																																			
Note: BIEN2410 OR BIEN2810 OR LFS 1901					3																																			
BIEN	2410	Cellular and Systems Physiology for Engineers			3																																			
BIEN	2810	Chemical Biology for Engineers			3			3																																
LFS	1901	General Biology I			3																																			
CHEM	1052	Laboratory for General Chemistry B			1				1																															
CHEM	2111	Fundamentals of Organic Chemistry			3				3									3	CHEM 2111 offered in Fall																					
CHEM	2156	Fundamental Organic Chemistry Laboratory			1				1									1																						
CENG/BIEN/COMP/ENG/CHEM		CENG Elective (Courses from the specified list)			12							3	3	3	3	3	12																							
BEng in Chemical Engineering Major Requirements					71	3	4	13	6	12	15	3	3	6	6	71																								
BBA in Marketing																																								
School Requirements																																								
ACCT	2010	Principles of Accounting I			3		3											3																						
ACCT	2200	Principles of Accounting II			3						3							3																						
Note: ECON 2103 OR ECON 2113					3																																			
ECON	2103	Principles of Microeconomics			3			3										3																						
ECON	2113	Microeconomics			3																																			
Note: ECON 2123 OR ECON 3123					3								3				3																							
ECON	2123	Macroeconomics			3																																			
ECON	3123	Macroeconomics Theory I			3																																			
FINA	2303	Financial Management			3													3																						
ISOM	2010	Introduction to Information Systems			3	-	-	-	-	-	-	-	-	-	-	-	-	0	COMP 1023, COMP 1022P, COMP 2011 and COMP 2012H are more advanced computing courses as compared to ISOM 2010. Students SHOULD take COMP 1022P, COMP 1023, COMP 2011 or COMP 2012H instead of ISOM 2010. ISOM 2030 is waived for DDP students who have taken and passed COMP 1023 or COMP 1022P or COMP 2011 or COMP 2012H. These COMP courses are similar or more advanced coding (Python) courses as ISOM 2030.																					
ISOM	2020	Coding for Business			1	-	-	-	-	-	-	-	-	-	-	-	-	0																						
ISOM	2500	Business Statistics			3	3	-	-	-	-	-	-	-	-	-	-	-	3																						
ISOM	2600	Introduction to Business Analytics			1	-	-	-	-	-	1	-	-	-	-	-	-	1																						
ISOM	2700	Operations Management			3										3	3		3																						
MARK	2120	Marketing Management			3					3								3	MARK 2120 is a major pre-requisite																					
MGMT	2105	Business Ethics and the Individual			2										2	2		2																						
MGMT	2110	Organizational Behavior			3										3	3		3																						
MGMT	2130	Business Ethics and Social Responsibility			2												2	2																						
Note: MATH 1003 OR MATH 1013 OR MATH 1020 OR MATH 1023					3.4																																			
MATH	1003	Calculus and Linear Algebra			3																																			
MATH	1013	Calculus I			3		(3)											0	DDP students should take MATH 1013 and MATH 1023 or MATH 1020 to satisfy the requirements of both BEng and BBA degrees																					
MATH	1020	Accelerated Calculus			4																																			
MATH	1023	Honors Calculus I			3																																			
Required Credits for School Requirements					30-40	3	3	3	6	1	3	3	3	5	2	32																								
Major Required Courses and Electives																																								
MARK	3020	Marketing Research			4						4							4																						
MARK	3420	Consumer Behavior			4							4						4																						
MARK	4210	Strategic Marketing			4								4					4																						
MARK 3000-level or above Electives (Any 3 courses of the subject and level as specified)					12									4	4	4	4	12																						
Required Credits for Major Required Courses and Electives					24	0	0	0	0	0	4	4	4	4	4	4	4	24																						
Additional Requirements for Dual Degree																																								
Requirements for Dual Degree Program																																								
TEMG	1011	T&M Professional Activities I			0	0	0	0										0																						
TEMG	1012	T&M Professional Activities II			0				0	0								0																						
TEMG	1013	T&M Professional Activities III			0						0	0						0																						
TEMG	1014	T&M Professional Activities IV			0								0	0				0																						
TEMG	1015	T&M Professional Activities V			0										0	0	0	0																						
TEMG	3550	T&M Case Analysis and Product Innovation			3		3											3																						
TEMG	4550	T&M Corporate Consulting Project			3.5					4								4																						
Required Credits for Additional Requirements					7	0	3	0	4	0	0	0	0	0	0	0	7																							
University Common Core Requirement																																								
CORE	C3 - C8	I CORE - Others			21				3						6	6	3	3	21																					
CORE	C1 & C2	I CORE - English Language			6		3	3											6																					
HBAW	1905	Behavioral Foundations of University Education: Habits, Mindsets, and Wellness			3		1	2											3																					
Sub-total for University CORE					30	4	5	3	0	0	0	0	6	6	3	3	30																							